

Aviation News

AVIATION NEWS PUBLICATIONS, INC.

1967-1968



Shape of the Future: Model of a new swept-back airfoil design being tested by the National Advisory Committee for Aeronautics. The test section is slung below a Northrop P-61 and air passing over the section attains sonic speed when the P-61 dives at about 500 mph. Story on Page 12 (NACA photo)

Airlines, CAA,AAF Attacking Winter Flying Problem

United installing Sperry gyropilots as CAA pushes radar systems.....

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Ercoupe Seen Leading Craft Among Private Owners

Production up to 3,400 with 10,500 backlog; engine shortage is problem.....

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Shelve CAB Deicing Plan in Face of Industry Disfavor

Postponement of rulings permits more orderly development, say engineers.....

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*the future of
AVIATION
DEPENDS UPON
AUTOMATIC CONTROLS*

1938

1941

1946

1956

1966

Just as automatic controls have shared responsibility for the phenomenal progress of aviation thus far, so they are prepared to contribute in the new accomplishments of the future. To Minneapolis-Honeywell, this fact is a vital challenge. That is because the banner of Honeywell is automatic control. How successfully the challenge has been met is demonstrated by the Honeywell Electronic Autopilot and the Electronic Turbo-Supercharge, standard equipment with the A-10, where precision and reliability are demanded. These, together with the Honeywell Electronic Fuel Gauge and Cabin Temperature Control systems have already won acceptance in the transport field. Today, the creative engineering ability that has been responsible for Honeywell's dominant position in the field of automatic control for more than 60 years, is developing many more control systems. And you can continue to expect further progress in automatic controls for aviation from Minneapolis-Honeywell Regulator Company, 2669 Farnell Ave., S., Minneapolis 8, Minn.

CREATIVE ENGINEERING

Notes of the Office of the Director, Research and Technical Services

MINNEAPOLIS
Honeywell
AERONAUTICAL CONTROLS

THE AVIATION NEWS

Washington Observer



NON-SCHEDULED GROUP REMAINS—Report that Administrator T. P. Wright will leave CAA Non-Scheduled Flying Advisory Committee due to lack of foundation, says CAA sources claim. The group has recommended numerous reforms in government regulation of aeronautic service operations, some of which the Administrator has approved. It was only recently that the non-voluntary committee members were given the right to review a government travel allowance for traveling senators.

who claim to see signs already of decreased demand for lightplanes.

SURPLUS PLANE QUIZ—The general arrangement and disposal of surplus aircraft and equipment, recently scheduled by the House Surplus Property Investigating Committee, will not wait for several weeks, until the members have taken a glimpse at WAA's classifying of 38 C-54s to the surplus.

PRICE ON AIRMEN'S GUIDE—An insert on this page, Sept. 9, CAA will cause complimentary distribution of the Airmen's Guide to Pilots, effective Oct. 15, and a yearly subscription cost of \$7.50 will be levied. Order should be sent to the Superintendent of Documents, Government Printing Office, Washington, D.C. CAA control numbers and communication stations continue on free file, however.

ECHOES PROPOSAL DIMS—The west-coast proposal that some high Army "titles" be put up for election to the presidency of Aircraft Industries Association has dissolved, and the subject is said to be shelved for at least several months. Lt. Gen. Oliver Eddy was discussed for the post as an authority among committee members in New York recently. Meanwhile, John Morgan, who is praised for an efficient administration as executive director, remains in active working staff of AIA.

DEPARTMENT OF TRANSPORTATION—Senate Small Business Committee proposal for a Department of Transportation, headed by a cabinet member, is out of date with sentiment of Congressional transportation experts who see such a plus as promoting policies. They argue that a Secretary of Transportation would be subject to the whims of national administration. So far, two proposals have received much support in Congress: (1) as an independent transportation commission, patterned after the Interstate Commerce Commission, which would take over functions of CAA and CAR, and (2) a transportation commission, absorbing ICC and the aviation agencies. The first plan was backed by Chairman Clarence Lea of the House Interstate & Foreign Commerce Committee; the second was urged by Mr. Truman in his Senate speech. Recent questioning at the White House has received non-committal replies on the President's present attitude.

AAF vs. WAR DEPARTMENT—Although Pentagon circles consider it highly unwise to antagonize Army Air Forces in raising staff resistance from budget officers of the War Department, who are holding out for sharp AAF cuts in the government's fiscal year 1948, beginning July 1, 1947, AAF has put forth its budget proposals to War, for comments and revisions, before the Budget Bureau opens hearing in early spring. AAF offers by the estimate of the general War Department in this instance is one more reason why they must have independence, if national security is to be preserved.

SUBMERSIBLE PLANES—Navy conservatives are questioning feasibility of a submersible plane that may be used in model tests by Navy technicians. The project requires a plane half enough to fit in a can laid in sea, submerge to escape pursuit or ambush some surface craft, and then take off again to continue flight. The "underwater aircraft" would be powered with jet engines in the air, and air vents would close automatically when the plane struck the water. As now, dairy power system would be used underwater.

SURPASSING THE FORECASTERS—Less than 18 months ago Administrator T. P. Wright predicted that by 1947 or 1948 the number of private aircraft would reach 75,000, where U.S. ownership probably would remain for a while, without competing improvements in plane performance and lower costs. Like other aviation forecasts, however, this one proved too conservative. Today we have 45,000 private aircraft and, considering present production rates and backlog, there will be well over 100,000 before the end of 1947, it is only fair to say that there are some lullings of depression in the industry, however.

PIAO SHOWDOWN—Determining of whether American or British electronic air navigation devices will be used in international commercial aviation is expected to be made at an Oct. 16 PIAO conference in Montreal, following demonstration of British and American equipment in London and at the CAA Indianapolis experimental station.

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News Digest

DOMESTIC

North American Aviation is adding 3,000 production workers to the 6,000 it employed on July 1. Balsley is up to \$96,000,000, a substantial gain over the June 1 figure of \$53,000,000.

Donald H. Cassidy, controller, CAA Airworthiness and wartime chief of the Persian Gulf Command, succeeds Thomas H. McCaffrey as Foreign Airworthiness Commissioner in charge of disposal of overseas aircraft.

Airport bonds totaling \$3,800,000 have been awarded by St. Louis to a group of investment banks headed by Drexel & Co. Bonds mature May 1 between 1944-45.

CAB Chairman James M. Landis returned to Washington last week from London, accompanied by British officials. He expressed confidence that progress has been made in strengthening British support of principles enunciated in the Brussels agreement.

FINANCIAL

National Airlines reports an estimated net profit of \$18,000,000 for July and August. Profit for May period last year was \$58,385. July revenue passenger miles were 18,645,811, and for August 18,718,818.

Paper Aircraft Corp. announces quarterly dividend of 11 1/2¢ per share on preferred stock, payable Oct. 15 to stockholders of record Oct. 1.

Reserve Aeromedical Corp., which is in the process of liquidation, reports a non-cash loss to June 30 of \$74,247. Reserve credit reduces net loss to \$38,750.

FOREIGN

Ceylon Government plans to separate Ceylon from the British Indian subcontinent. It will be known as the Federal Republic of Ceylon. It will be a member of the Indian Commonwealth and will have its own foreign service.

CIA Headquarters at Langley has begun a fully automatic 3-hr service between Mexico City and Merida, Yucatan, with four-engines aircraft.

Express Aeronave Interamericana (Cuba) will increase its authorized capital stock to 3,000,000 shares of \$1 par value. This is an increase of 1,000,000 shares. Shareholders outstanding number 177,818.



Industry Observer

Completion of the Navy contract for development of the XF11G-1, a fighter powered by a conventional propeller and piston engine in the nose and a jet engine in the tail, virtually winds up all aircraft production at the Curtis Wright plant. To retain production workers the company has added jobs—finishing big Globe and Piper in addition to its previous work for Aerco.

Second model of the Republic XP-12 is well under way with production of the static version (Kankakee) scheduled to begin as soon as Republic's C-54 conversion contract is completed.

National Aircraft Shows promotion staff is still working on a revised world data to local Hawaii Hapagus globe girding around a 3-day 1954 tour in 1958.

Military aircraft acceptance for August rose to 130 compared with 107 in July. The following types and quantities were accepted by the services: 2 Martin PBM-3A, 1 Convair B-36C-1, 2 Douglas B-57B-1, 16 Lockheed P-80 and 16 YP-80, 28 Grumman F9F-2, 16 P-80B, 21 Convair YF-100A-1, 2 Convair YF-100A-2, 5 Fairchild C-12A, 8 Standard R-51 Intruder. Average weight for August was 716,000 lb. compared with 516,000 lb. in July.

Joint efforts of State, War and Navy departments in recruiting Germans to assist American research programs are expected to gather 10,000 German scientists during the next few months in the face of tough competition bidding by the Russians.

Civil Aeronautics Board is writing the long awaited division on the North Atlantic fare reduction proposed by the International Air Transport Association.

Specialties, Inc., an engineering research firm engaged in development work on rocket-powered guided missiles for the Navy, is occupying a portion of the former AAF field at Buckingham, Fla., near Fort Meade.

U. S. Maritime Commission is preparing to go to bid before the CAB on behalf of the steamer line making review of board policies bearing on fare charges from consideration as far as possible.

Plans for a Chilean airbase to link Australia with Santiago have reached the regulation stage on a diplomatic level.

Airline Whitworth Aircraft Co., Ltd. has been awarded a contract to build the British II Flying Boat. It will have a long range maximum range of 6,000 miles, a gross designed to carry 20 passengers on long hauls or 42 on short hauls. It will be powered by four Merlin 50 turbo-prop jets and have a range of 4,000 miles at 10,000 ft. and 100 mph with a gross weight of 35,000 lb. Fuselage interior is to be partitioned and for conditioned.

Consignment of \$11,800,000 in industrial diamonds was recently flown from Montreal to London. It represented the balance of a war seizure of 12,000,000 carats built up in Canada in 1945 to feed precision engineering war industries in North America.

New foreign service reports indicate there were only 375 registered aircraft in Canada at the first of the year, of which 103 were used by British companies, 35 by Canadian firms, 29 by Canadian firms under U. S. license, and 161 by U. S. firms. There were three German-built craft.

Big Cessna Co. has a three-place open cockpit model with triple landing gear, single rudder, no the crowning board. Plans are being drawn to cruise at 150 mph and carry a 540 lb payload with a 150 mi. ceiling range. The prototype is expected to fly around February.



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GOOD YEAR
AVIATION
PRODUCTS



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**Airlines, CAA, AAF Make Joint
Attack on Winter Flying Problem**

United installing Sperry electronic gyroscopic using autostatic landing device as CAA makes work on radar installations

Announcement by United Air Lines of plans to install an advanced gyroscopic system on all planes a Sperry electronic gyroscopic incorporating autostatic landing features. The American Airlines, Inc., and Pan American Airways have also adopted the device. The CAA and AAF are one of air transport's major problems but winter landings.

In the face of widespread warnings that this winter will give air transport its severest test of ingenuity—because of more and larger planes and increased operating costs—CAA is making work on its standardization of landing devices. The CAA and the airlines are carrying on an increasing study to landing devices. Last week, representatives of CAA and the Air Transport Association sat down with AAF officers to arrange for a loan of AAF Ground Control Approach sets for CAA operation and use by civilians in the Washington, Newark and Chicago areas.

Outline of its experiments with GCA at Indianapolis during the past six months, the CAA's first step was to find out what GCA could have meant especially to the blind landing problem.

CAA Logs—In this respect, CAA had logged 600 blind landings. TWA, practically all of whose planes have checked out as GCA and the AAF, has already put up a borrowed set at its Newark, Del., base for training in own planes.

The Sperry device being installed by United, and demonstrated at MacArthur Field, Long Beach, is copied to utilization of the CAA system of fan machines, locator beam and glide path. In normal operation, a pilot operates on the runway by means of the locator, then rides down the glide path, with a cross-pointer on the instrument panel giving him a check on whether he is lined up with the runway and making the proper descent.

By using the Sperry A-12 Gyroscopic, a plane can be landed on the CAA system with the pilot's hands off the controls. A somewhat similar device was perfected during the war by the Marquette-Honeywell, but is not yet produced commercially.

Shifting Standard—Advantage of the automatic system is that it is another step toward realizing the possibility of a pilot's disengaging instruments. This particular hazard was discussed last week by James Adams, Louis de Flaris, assistant chief of Navy's research and development, who has become so concerned that he held a Pittsburgh meeting of the American Society of Mechanical Engineers. "We have reached the limit of the men of average ability to utilize the information that is passed into the cockpit."

Advantage of GCA, which at the same time makes it most accom-

modating to engineers, is that it takes responsibility from the cockpit, and that is over to the controller on the ground who, as radio operator, can see the panoramic picture much better than the pilot.

By keeping tabs on a plane on the radar scope, a GCA controller makes a plane onto the runway. All the pilot is required to do is to maintain a heading and constant rate of descent. He needs no additional instruments on his plane and only the usual radio receiver for GCA control, in contrast, requires four or five radio receivers in the aircraft.

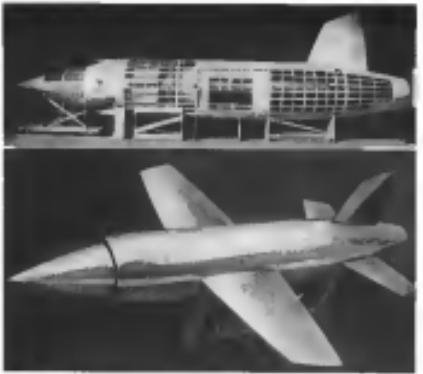
Explore Objections—GAA, ATA and the Air Line Pilots Association maintain that pilots do not approve of GCA because they do not want to get their safety entirely in the hands of persons on the ground. This attitude is at variance with the experience of TWA which is going ahead with its GCA plane and the rest of its planes endorse the radar system.

This objection to GCA—extremely psychological—will be given a thorough work out when the GCA sets loaned by the Army are as operational for making use about the first of January. Initially, however, CAA does not plan to make full



NEW DESIGN FOR LONG RANGE BOMBERS

Drawing artist's drawing of a proposed 12-engine AAF bomber designed by parasite fighters. Bomber would be powered with six prop jet engines and six pure jets and have a range of more than 10,000 miles. Each bomber would carry two parasite fighters in front and aft bays with a large middle bay for the bomb load. Parasite fighters would be released from both bays for launching and be equipped with jet-powered canons. (Cessna Aeromarine Laboratory photo)



BRITISH SUPERSONIC PROJECT:

Afterword eventually for "economic reasons," Miles M.22 was to be a piloted craft designed to travel at 1,000 mph. at 36,000 ft., whose ultimate was to be reached 1½ yrs. after takeoff. Shown here are photo of mockups. M.22 was to be 33 ft. long with 27-ft. wings span, and an engine developed by Power Jets was to be fitted, capable of 17,000 kp. In some respects middle-sized, M.22 resembles Bell's X-1 (Power Jets photo).

and sole use of GCA's possible talents. The searching screen, which covers a 30-mile radius, will be used for traffic control and any take-down buildings will be monitored by the CAA landing system.

Full details on the arrangements under which CAA is acquiring these three sites and the four that are now to be acquired this week AAF has a total of 35 GCA sets within the continental U. S., seven of which are the latest model, requiring only two instead of the wartime six controllers. Presently, the three sets to be turned over to CAA will be the improved models.

• **Finalist to Plateau**—CAA's system, an outgrowth of developments in the lighter series, is to be used in some form, has been decided, and is familiar to airline pilots. That is one basis why CAA, backed by the airlines, has been reluctant to consider a complete switch to GCA. CAA and some airlines, like the airline that GCA is not proven and that the CAA system, with its faults, is at least a system in being.

The point is made that although

the system is nearly 25 years old, by 1945 there were only eight ILS installations. This was due to large measure to the difficulty all through the thirties for a better system, with engineers holding out the hope that in a few years more, such a system would be available. Today such the same attitude is taken by the airlines, requiring that they buy GCA, but still rule. Rather, "In two years" the organization runs, "we will have a better radar system as we planned with this."

Hoping to avoid the error of the former CAA is proceeding as far as possible to install its ILS. Presently in operation are ILS at 38 commercial fields, plus 18 installations at Army fields. The system as installed by CAA has not yet been able to use By 1945, Army fields, CAA claims, that its system is in operation at 112 stations. On the premise that the CAA system will be standard for some time to come, United is going ahead with installation of the Sprague apparatus, the electronic landing fixture of which will be useless without CAA's instrument landing system.

Meanwhile, the airlines face a

winter which is being forecast as holding in bad weather over the hopes of air transport for continued expansion. Landing capacity to the airtours of CAA, ATA, and AAF last week was the thermometers which at Rutherfordton, N. Y., registered 36 degrees, at Spokane 43, at Albany 40.

Wright Employees Suit Asks \$1,500,000 Pay

The Federal court suit of some 3,800 present and past employees of Wright Aeronautical Corp., seeking to make the principle of portal-to-portal pay in this plant as soon as it is determined by what other aeronautics companies and other industries may face in the future.

Although these workers are not represented by a union, CEO President Philip Murray recently served a CIO card which means a three representation in aircraft plants through the United Automobile Workers, would make pay for "working time" in manufacturing plants. Portal-to-portal pay in excess has been backed by the U. S. Supreme Court, and the United Mine Workers, District 18, AFL, has been pressing for it in manufacturing industries, where it also has members.

Intense rivalry, restrictions on general wage increases and a recent Supreme Court decision in a case involving the MI Classroom Faculty CIO have given Wright an incentive to extend the principle to manufacturing. The court held in the MI Classroom Teachers case that, under the Fair Labor Standards Act, time spent by employees in walking to their place of work after passing the timeclock was "working time" and subject to wage payments.

It sustained the contention of the employees that preliminary activities such as putting on aprons and overalls, removing shirts, putting on switches for lights and machines, removing tools, and removing and replacing tools, constitute working time unless the time is compensated.

Wright employees, in the still split in Newark, ask for an estimated \$1,500,000 to be time spent each day between Jan. 1, 1944, and Sept. 8, 1944, in walking from the plant gates in the cloakrooms, changing clothing, walking to the timeclock, walking to place of work, and preparing switches for operation, as well as for similar time spent at the end of the day.

Coordinated Transport Department Is Urged by Senate Committee

Small business group recommends cabinet status as urgent necessity to meet transportation emergencies of public.

Senate legislation to promote coordination of the country's transport systems—air, water, rail, motor—into a planned system serving the public interest is all sectors of the country equitable as determined "an urgent necessity" in a comprehensive "Message" report on transportation issued by the Senate Small Business Committee.

"World War II postponed, but has also made more urgent, the necessity for further Congressional action to provide for the coordination of our national transportation system," the report asserted. The "all-in-one" method of transportation among areas "should be retained in more intense form than ever before," it was predicted, will cause "widely inadequate" in meeting the transportation requirements of the public or enable the various carriers on a national basis.

• **Ways of Dangers**—In proposing increased coordination among the various modes of transportation, the Committee warned of the dangers inherent in "the concentration" of ownership—the proposal which has been aggressively pushed by the Transportation Association of America, an alleged front for the railroads.

It is to strengthen and coordinate the nation's transportation system, the Committee recommended. Coordination should be given to the establishment of a Department of Transportation, headed by a Cabinet-rank Secretary, which would take over the functions of the Interstate Commerce Commission, Civil Aeronautics Authority, and all other transport functions now dispersed among various governmental agencies. These special agencies however should be retained as independent units (1) to coordinate Federal Transportation Authority, to study transport developments continuously and make recommendations for furthering a sound system; (2) a National Transportation Advisory Council, composed of Presidential-appointed individuals prominent in transport fields, to serve the Federal Transport Authority in an advisory capacity; and (3) an Office of Public Transportation Control, with the duty of representing, at the direction of the President, the Federal Transportation Authority, the public interest in proceedings before the CAA and CAB.

• **Ask Joint Operations**—In order to permit full coordination of serv-

ices, giving shippers the choice of whatever routes and combinations of transportation agencies they may desire, the Senate Committee, the H.R. 212, and the H.A.A. Act should be amended so as to permit mandatory for airlines to join with other carriers in the maintenance of joint transport routes and rates "as are desired or found needed in the public interest." Present law makes it mandatory for common carriers to establish routes through routes of the following kinds when deemed desirable in the public interest: all-air, rail-air, all-water, all-pipeline, rail-and-water, and also rail-and-plane.

Motor lines along with airlines are not now obliged to join—but should be given other types of carriers an opportunity through "joint type" routes.

Federal and state tax authorities should work out a more effective and equitable program of carrier taxation preventing, among other things, for certain members of carrier property—a cause long advocated by the airline interests.

• **Factors for Airlines**—Should be retained at federal capital stock rates, dividend value excess profits rates, taxes on transportation of property, and taxes on interest and dividends.

The Railized Railroader Board

AVIATION CALENDAR

Sept. 27—World Aviation Conference
Sept. 28—U. S. signed for International Safety
Sept. 29—All Google Air Games, Atlanta
Sept. 30—Air Traffic Conference of 30 Cities
Oct. 1—Air Traffic Conference of 30 Cities
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maximum a permanent advantage over laminar-and-turbulent.

Position of company far "stretch" profits is attracting interest. One company is developing a low-cost laminar wind tunnel, requiring a floor area only 30 by 50 ft. Another is designing a high-speed wind tunnel with a 100-ft span. A well-known glass company is working out laminar and turbulent edge schemes to make a group of older houses look different. A filling station equipment maker has shown PHA a laminar unit.

NACA Tests Airfoils For Boundary Control

Sweptback wing with variable angle of attack also in leading edge control at some speeds.

As part of its overall investigation of boundary layer control, the National Advisory Committee for Aeronautics is testing a sweptback wing design with variable-angle-of-attack slots in the leading edge.



Aeros Airfoil. This view of the swept-back aircraft NACA is testing as part of its investigation of boundary layer control and run jet propulsions at the Aerostatic Research Laboratory, Cleveland. The mechanism is attached to wings which give a rapid reduction of the character of the surface wave the wing. Tests include varied angles of the wings in the leading edge of the wings. (NACA photo)

of the wing. A model of the wing-shape under the fuselage of a Northrop P-61 is being given free air tests at NACA's Aerostatic Research Laboratory at Cleveland.

NACA is interested in the effect of the flight angle because of the transonic strength combined with high speed of the aircraft. These characteristics play an important part in the testing of the sweepback control section. When the P-61 attains a speed in excess of 500 mph an adverse surface over the test section reaches near speed.

Sleek Prong Shape.—Purpose of the specially-designed aircraft is to attempt to determine the proper angle of attack of the leading edge air intakes that increase heat transfer of enclosing the boundary layer of air closest to the skin of the aircraft. It is known that these slots produce an effect upon the flow of air over the wing. What is not known, and what NACA is seeking to find out, is what effect is produced by a slot at right angles to the leading edge, one parallel to the fuselage, a curved slot,

and various other arrangements.

Tails of part of like material fastened to the wing surface give a visual indication of the effect of the air intakes on the flow over the wing. Slits at various angles produce different reactions on these tails. NACA's aim is to develop the air intake which, while controlling the flow of boundary layer air, will produce the least friction in the most efficient flow over the wing.

Bad Purpose.—This sweptback wing design with the air intakes is serving a dual purpose. He other use is with NACA's extensive investigation of run jet propulsions. Just as the Douglas Aircraft engineers are examining the possibilities of reducing the air resistance of transonic boundary layer control by using flow-control devices (AVIATION NEWS, Sept. 25), NACA hopes its new approach in the wing's leading edge can serve the same end.

West Coast Opened

West Coast aviation leaders, from land base operators to airline executives, gathered in Reno, Nev., today for a close scrutiny of the state of their business after a full year of petroleumopoulos.

It is the third annual Western Aviation Conference, and the meeting agenda spreads over two days of panel discussions and addresses by aviation specialists.

The invited conference will present the first annual awards as "Aviation Educators," with western college superintendents and community air school operators as a division of methods of public instruction in aviation problems.

Civilian Cut

Full effect on turbines at Wright Field of the cut in AAF personnel ordered to be made by the Defense Department.

NACA is interested in the effect of the flight angle because of the transonic strength combined with high speed of the aircraft. These characteristics play an important part in the testing of the sweepback control section. When the P-61 attains a speed in excess of 500 mph an adverse surface over the test section reaches near speed.

This is approximately one-half of the total AAF cut, and in the greatest magnitude in any AAF command is AMC, with 61,474 cutbacks. In the largest command in terms of personnel, however, the AAF reduction, 17.3 percent, is under the blanket 20 percent originally scheduled.

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Turbine Blade Design Blocks Jet Progress

NACA conference at Cleveland studies problem of improved impeller blades for axial flow jet.

While using older methods

Hope of reducing fuel consumption of jet engines and thereby attaining greater operating economy is seen in experimental basis conducted by the National Advisory Committee for Aeronautics on the design of the impeller blades on the turbines in jet engines.

To reduce the study of impeller efficiency, NACA has held a conference at Cleveland where the bulk of the question was stated by W. K. Ritter. Summed up, it is that improvements in impeller design are difficult to attain because, despite the tremendous effort now being exerted on jet propulsion, there is a lack of adequate experiments on "impeller flow theory."

Consider It Problem.—At the bottom of the problem is the curvature or camber of impeller blades. NACA is testing various designs, with parabolic, elliptical and circular blade curvatures. The parabolic blade currently is giving greater efficiency and showing the widest capacity range of the three.

The range of regular blades—the rate at which air is forced into the compression chamber—is a key point in the entire problem. In planes with propulsive engines, variable pitch propellers make possible constant performance of the aircraft with a variation in engine output.

Gilders Sale

Super G-46 cargo gliders are being put up for sale by War Assets Agency. The agency has a week of four locations: Totowa, N.J.; the gliders are at Kirtland Field, San Antonio, Tex.; and the AAF Propulsion Depot, Bldg. 100, 101st, 102nd and 103rd Air Propulsion Depots, Ft. Worth, Calif. (101), and Ft. Dix, N.J. (102, 103).

From Sept. 25 through Oct. 12, sales will be made only to priority bidders. In a previous sale of this type of glider at Tonawanda, N.Y., the agency had 1,175 offers.

Designed by Waco, the G-46 is a 15-passenger, high-wing monoplane, presumably not eligible for CAA certifica-

tion. This change in viewpoint recently became apparent when Brian's Frank Whittle, inventor of the jet engine, visited NACA's Cleveland laboratory and advised against the impeller research in favor of studying the centrifugal design.



AAF'S NEW EJECTION SEAT IN ACTION!

First action shot of the AAF's new ejection seat and ejection seat. The aircraft shown is the P-61's tail boom and before his ejection chair sprung driver functioned. (AAF photo)

In designing jet engines, impeller thrust is calculated on the basis of the superimposition of the axial-flow engine, NACA is going ahead with its impeller study. Attainment of a wide capacity of impeller blades might make it possible to reduce jet engine output at altitude—while keeping high performance—with a consequent reduction in operating costs.

Canadian Surplus

Canada War Assets Corporation has a large number of Douglas C-47 Skytrains, Canadair V. Cessna Cessna, Hawker 112 and Avro Avro aircraft for sale, with Department of Transport agreeing certification of airworthiness for these aircraft.

The PBY-5A will be about \$33,000. The Avro V. Cessna Cessna, Hawker 112 and Avro Avro aircraft for sale, with Department of Transport agreeing certification of airworthiness for these aircraft.

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The government company plans to sell several hundred aircraft, including the Avro V. Cessna Cessna, Hawker 112 and Avro Avro aircraft for sale, with Department of Transport agreeing certification of airworthiness for these aircraft.



Interior view of the Boeing 314 cabin, illustrating the "Salon above the clouds" concept.

Salon above the clouds!

There's no travel with all the comfort of a fine hotel. Aboard the sleek Boeing Stratocruiser, luxury is built right into the design—from spacious room cabin to superbly appointed lounge on the upper deck deck.

Passenger are lifted insensibly by the most mighty wing that has the in comparable Boeing B-52's or the nonstop to safety. Great structural strength and advanced aerodynamic design—two of Boeing's copyrighted expression in building a genuine air castle—make the fine travel experience

just as safe, save flight high above weather. Glowing or descending, in power or wind altitude conditions climates doesn't affect my level.

The Stratocruiser's tremendous power and capacity, major money comfort and traveling speed of you to you miles per hour represent a combination unapproached by any other airplane. Its amazingly low operating cost contributes to the low cost placing air travel within reach of everyone. Boeing Airplane Company, Seattle, Washington Wichita, Kansas



The world's largest flying boat, the Boeing 314.

BOEING
STRATOCRUISER

Boeing is building boats of distinction for those far-reaching offices.

PAR AVIONNEUR WORLD AIRLINES • UNITED INTERCONTINENTAL AIRLINES
PENINSUL AIRLINES • AMERICAN OVERSEAS AIRLINES • UNITED AIR LINES

AVIATION NEWS • September 23, 1948

currently in production, is now \$3,650. It was first priced at \$2,800 but the price was raised about July 1, like those of many other light planes on account of increased labor and materials costs.

An experimental twin-engine Kestrel for four or five persons has been under development at the Riverside plant for a couple of years, but is still far from production. The prototype plane has yet to fly, and may accomplish its maiden flight sometime around the first of October. Little is disclosed about the plane beyond the fact that it is powered with two 125 hp Continental engines, has a greater load capacity, and that it is designed to be two-control and ignoreable like the current model.

The twin-engine plane, with good looks, might be in production by the end of 1947 or the beginning of 1948. Its price is likely to be somewhere between \$7,000 and \$10,000.

►Price \$4 a Day—ERCO's president, Lee Wells, and Henry Bernstein, chairman of the board, had hoped the company would be selling out the all-metal (except wing covering) two-place planes at the cost of \$6 a day, by this time, and might have come close to the goal had it not been for the major basic of the lightplane manufacturer, lack of engines. The company shut

PRIVATE FLYING

Ercole Seen Leading Lightplane Among Private Pilot Owners

Production at Riverside, Md., reaches 340 since Jan. 1, with backlog of 10,500 unfilled orders; engine shortage biggest problem

By ALEXANDER MCGUREY

The two-control spruce, biplane postwar Ercole (ERCO), in the opinion of its manufacturer, has a market comprehension unmatched among the numerous class of private owners, thus any other lightplane in the market.

At the Engineering & Research Corp. plant at Riverside, Md., where 340 of the trim, little triplane-ground, two-seater airplane have been built since last Jan. 1, in 95,000 sq ft of manufacturing space, the sales department is tabulating an ownership survey. Figures, still incomplete, indicate that the ownership of the planes is widely scattered among professionals and commercial farmers and farmers, with only a negligible number in the hands of aircraft service operators.

On the other hand, the bulk of production of many of the other lightplanes now in quantity production have gone in the aircraft service operators for CFI flight training schools. Ercole's general tally shows farmers and physicians lead in ownership, and that a large percentage of owners are men and women in the 25 to 60 age bracket. Many Stratocruiser fans have been won over to the lightplane experience, with the easy-to-fly Ercole, than any other plane we know. Now George Ryan, director of sales, has a new use to add to the growing list, and watches its authoritatively.

A middle-aged man came in today delivery of his new Ercole and to fly it home, a cross country flight of several hundred miles. He earnestly requested he had called the week before. He was finally persuaded to take two days of additional intensive flight training by company instructors, to be rehanded and dissolved released from the plane for the flight. He took off from Riverside, proceeding in wire back news of his safe arrival. He

didn't crack up or have a forced landing. The plane was received when he had arrived on schedule.

At the current production rate of 30 a day, ERCO has an estimated backlog of 18,000 unfilled orders still on the books, at the current year. The number of orders has been down since last January, when the company had a total of 21,012 orders and stopped taking more. ERCO expects to receive its orders about the first of the year, feeling that some owners may have purchased other planes or have changed their minds by this time and will start the year with new contracts.

►Price \$3,650—Price of the 412-C two-place Ercole is the only model



412C Ercole. Engineering & Research Corp., at Riverside, Md., last week had produced approximately 2,600 of the 412-C two-control Ercole since the beginning of 1945. Officials believe more of their planes are in the hands of private owners than those of any other manufacturer.



CULVER ACCOMMODATIONS:

Features of the new Culver Model V side-by-side two-place STC planned construction plane, which has been designed for passenger and pilot passengers are shown. Interior view shows seating arrangement and dual stick, with wheel to operate. Smoothly flowing interior view shows luggage compartment and door forward.

down production completely for a week, ending in September because of engine shortages. As a result of the shutdown the company only expects to make 500 planes in September, as against 600 in August.

The Escouage is one of the few lightplanes to use a 75 hp. engine, although basically the Continental C-72 four-cylinder engine used, is of the same design and structure, except for carburetors, and is used in the Cessna 172. Continental units can be seen in other light planes, including the Culver Model V and one of the Globe Swifts. EMDO scratchers are advised its distributors and dealers that it was permissible to replace the engine with surplus military up to 2250 rpm units. The Cessna had a 3000 rpm. recommended rate of cruise, and since Continental engineers offered no objection to the higher cruising rates.

Despite the trend toward metal wings, Escouage, it is likely that EMDO will continue with a permanent wing for some time to come. The fabric supply situation isn't as bad as it was, and the changes were involved in replacing the all-metal wings would slow down production considerably. However, the company has been experimenting with all-metal wings, and has tested at least one wing design, so that it is hoped to ensure that the all-metal wing Escouage may be forthcoming, perhaps in a year or more. Still another future variation on the present model be-

longing service. Plans call for offering the definite quota for deliveries in 1947, while continuing export merchandising in the remainder of 1946 to similar and a few demonstration planes to foreign customers.

Approximately 60 percent of the company's planes are now being shipped by air car, and the loading platform at the company plant is being expanded to permit loading of 50 sets at a time. The other deliveries are heavier, either by surface companies, or by dealer representatives and customers.

CAA-Industry Agree On Recording System

CAA officials and industry representatives have virtually agreed on the form of a recording system which will be required on all aircraft which will be using the "electronic recording system" on new aircraft built in some cases by manufacturer, distributor, dealer and customer on the same plane (AVIATION NEWS, July 23). The new plan will provide for a dealer's registration card or cards, which will be given by CAA at a fee not yet determined, and which will be transferable as auto dealer license tags are transferable, from one new plane to another.

When he delivers the plane to the customer, a tag will be attached to the bill of sale, indicating which part showing he has applied for CAA registration and made the other two parts of the form in CAA hands and part for him. She retains the other, affixing the plane's registration to the engine, to replace the temporary evidence of application. Not much of the new system is expected to a considerable savings to personnel plane dealers, distributors and manufacturers, as well as a quicker and more efficient means of private plane registration, and a happier consumer.

New Low-Wing Pusher Developed by W.R. DuRand

An all-metal, low-wing pusher two-three place personal plane, the DuRand 3A, is being developed at Omaha, Neb. by William H. DuRand, former head of the aviation department at the University of Omaha. He has organized DuRand Aircraft, Inc., and has set up a small shop on an 80-acre flying field west of Omaha. DuRand said

the plane was designed for mass production, and after the prototype is proved in structure tests and flights, he expects to seek backlog to make it in quantity as early as the design is seen as commercially feasible. DuRand, who previously in 1938, had built and successfully flown his first airplane, the DuRand A-48, which was never manufactured in quantity.

State Officials Group To Discuss Air Rights

State and federal regulation of aviation both from economic and safety standpoints, was scheduled for discussion at a two-day session of the National Association of State Aviation Officials, with William L. Anderson, Pennsylvania transportation director, presiding at St. Louis, Mo., last week.

Other subjects on the agenda included: Special Problems of State Aviation Officials, Airports and Seaports, NASAQ Aviation Act, Veterans Extension Under GI Bill of Rights, Personal Aircraft Navigation Act, Application of Federal Airport Act, Airport Design and Construction, Airport Management, Public Relations for State Aviation Commissions, State Police in Aviation.

Speakers scheduled from outside the organization included: Michael W. Arnold, vice-president of Air

Transport Association, Harry McBeth, executive director of National Aviation Trades Association Dr. N. L. Englehardt, Air Age Educational Research, Thomas Clark, General Central Airports, Clinton, Okla., William A. Johnson, C. F. Hyatt, and E. L. White Federal Commissions Commissioner, George Mathews, Bendix Radio division, Niels Jakobson, Weather Bureau, John Matson, George Berser, E. W. F. Schmidt, Elwood Cole, and James V. Bernardo, all of CAA, Forrest Wallace, president, National Flying Farmers Association, Jameson Cochran, former national director of WASP, William Sawyer, Western Aviation Corp., and W. G. Goddard, Bellanca Manufacturing, chamber of commerce.

Rhode Island Airport Trains 300 Veterans

Rhode Island State Airport, Warwick, R. I., has announced it will open the first flight school in New England on the basis of landings and takeoffs by the group of more than 300 veterans who are training flight instructors on an schedule there, in addition to routine flying.

The field counsel trainee reports that there have been more than 16,000 landings and takeoffs by student flyers in each of the last three months. Some of the smaller operators are complaining that the

Gil trying to retard other flight training, by would-be flyers who are deferring their training until the veterans program "slow down."

The been in student flight, plus a recent CAB announcement of three additional stations to serve Rhode Island, is whether state programs in operation now will be in the interests of the state. Rhode Island state law provides for state control of public airports, rather than control by city or county.

Regent Flying School at Hillsgrove, as operated by East Coast Aviation Corp., which has more than 100 students. This firm offers complete training and a few of its graduates already have airline jobs. Equipment consists of about 10 Avro 600 trainers, a couple of embossed trainers, and several other planes. There are classrooms, dorms and a home theater.

The number two outfit is Wangan Aviation, which has a small aircraft of 10 senior students. Wangan is a bay New England operator with other bases at New Bedford, Westfield and Boston, Mass. This company has been contracted to operate a feeder service in the northeast area.

Other operators operating on schedule at Hillsgrove are Nelson Aviation Service, with about 40 students, Connecticut Aviation, about 12 Allen School of Aviators, 20 and Lippincott Aviation Corp., 8 Allen also runs a course to train N. R. instructors with an



BOOMY WHEELBAR INTERIOR!

Photographer of the interior of the all-metal two-seat personal plane, the DuRand 3A, is being developed at Omaha, Neb. by William H. DuRand, former head of the aviation department at the University of Omaha. He has organized DuRand Aircraft, Inc., and has set up a small shop on an 80-acre flying field west of Omaha. DuRand said

landplane gear, and is credited with 125 mph. cruising speed and 35 mph. landing speed. It is powered with a 190 hp. Lycoming engine. The plane is expected to carry useful load of 1150 lbs. including five persons and 160 lbs. of luggage plus fuel and oil.



New England Air Map Locates 218 Airports

Locations of the 218 airports and seaplane bases in New England with altitude, type of runway surface and length of longest runway, is shown as a new map published by the New England Council and the New England Conference of State Aviation Officials, for use of commercial and general aviation planning, building, traffic.

The map side of the map provides a directory of all airports and seaplane bases in each New England state, showing services available at each landing facility, availability of ground transportation, and major types of recreation in the area served. The map is to be distributed by the six New England state directors of aviation, Russell Hillard, New Hampshire; Philip E. Tinker, Maine; Edward F. Knapp, Vermont; Crocker Seward, Massachusetts; Willard Wickham, Rhode Island; and Thomas Lockhart, Connecticut, and by the New England Council, Statute Mile, Boston, Mass.

Howard has signed a lease for the airport's operation with the City of Jacksonville, Fla. His air transportation service, called "Sobie's Greenback-High Fliers," Ferrellville, and Rocky Mount, all in North Carolina, Albany, Ga., Washington, D. C., through the affiliated Air Services, Inc., and Jennings Airport and Blanchard Field (latter is a seaplane base), both at Orangeburg, S. C. and Columbia, S. C.

Hoover Airpark Adds 18 Acres for T-Hangars

Addition of 18 acres to the

Hoover-Parks Airport at Indianapolis, will provide space for 100 additional T-type storage hangars to be erected as part of a

\$750,000 development and land-

lease of about 180 students.

All of these concern report same

falling off of 48 registrations dur-

ing the first month. Nevertheless,

the concern remains that the

fall may mean more than 30,000 train-

ings and landings are recorded by

student pilots for each of the con-

cern months.

Because airline pilots have com-

plained about the dense student

traffic, the students are permitted

only a single takeoff from the con-

crete runway. After that they must

practice touch-and-go landings

from the end of the run.

And the air site is under way to

have all student training equipment

with radio receivers to provide

the tower's control of traffic. At

present the pattern is planned for

airplane landings and takeoffs by

turning on the revolving beacon,

a signal for student drivers to sus-

pend activity until the commercial

ship is out of the loop. When the

light goes on as students leave the

field, there is no stir in the

pattern and no disturbance to land.

Despite all the activity, which has

been going on since early spring,

there have been no serious acci-

dents at the Hoosier Airpark field.

One reason is that the state

firemen are much encouraged

for the field and a newspaper cam-

paign is under way to spur action

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FOR SALE! TO THE HIGHEST BIDDERS FOR CASH
LAND — BUILDINGS — MACHINERY — EQUIPMENT
OF THE AERO PARTS MANUFACTURING CO.
WICHITA, KANSAS

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 TUESDAY and WEDNESDAY **October 8th and 9th**

150,000 SQ. FT. ONE-STORY BRICK and STEEL

INDUSTRIAL BUILDING

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PRODUCTION

Aircraft Companies Turn Talents To Non-Aviation Manufacturing

Diversification growing as industry seeks extra-curticular business; buses, trolley boats, cameras, and toys among side products; none company still in aircraft production exclusively.

By BLAINE STUBBLEFIELD

The aircraft industry, having declined from wartime high places in the country to \$11.5 billion annual sales with 3,800,000 workers, is still producing at \$11 billion with 2,800,000 employees, is seeking new or lesser business to utilize invested capital, excess expanded plants and highly skilled personnel.

Two dozen aircraft companies are manufacturing, developing, or trying in with non-aviation products. Three or four companies will build light-steel prefabricated dwelling houses under contract of Federal Housing Authority.

Apparently leading the diversification parade is Consolidated Vultee, which has acquired control of ACF-Brill Motors and its wholly-owned subsidiary, Illinois Steel Motor Car Co., maker of motor buses, trolley coaches, marine and industrial engines—free America Car and Foundry. Backing \$15,000,000, ACF has backlog orders of \$50,000,000. Consolidated is consolidating its other companies, which has also acquired control of Crosley Corp., maker of household appliances and radios. ACF has central site of New Ideas, Inc., manufacturer of farm equipment. The Consolidated-owned plant at Nashville is producing gas and electric kitchen ranges, and will produce New Ideas appliances both to be marketed by ACF. The company has been interested in designing and building light-frame houses for several years, and presumably will emphasize that phase of Bell-built.

Ryan Aeronautical is producing metal ship escort shells, 1,000 per day, for a mid-West distributor. Company's Metal Products Division is building test quantities of equipment for oil refineries, food industry, fisheries, and other items "which naturally fit our facilities," and other long-term products. Ryan's contract with Navy

for development of high heat-resistant alloy for jet exhaust systems undoubtedly will yield more than in the non-air lines.

Marlin Flotilla—Glen Martin early in war diversified beyond aircraft with Marlin boats, to be produced at a \$500,000-plant at Pasadena, Calif., which will have an initial capacity of 11,000,000 lbs. Marlin produces Martin-Marietta's plane avionics for a key role in postwar rearmament, also Marlin boats, also Honeycomb light panel structures for military equipment. Company is associating with Westinghouse in development of aircraft or booster aircraft for relay of frequency modulation and television. Total plants to Company control now 100.

Three aircraft companies are making small boats. Grumman started turning out aluminum canoes soon after V-J Day, developing orders of \$50,000,000. Consolidated is marketing its own boats, which has also acquired control of Crosley Corp., maker of household appliances and radios. ACF has central site of New Ideas, Inc., manufacturer of farm equipment. The Consolidated-owned plant at Nashville is producing gas and electric kitchen ranges, and will produce New Ideas appliances both to be marketed by ACF. The company has been interested in designing and building light-frame houses for several years, and presumably will emphasize that phase of Bell-built.

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Forchild's Dusenfeld Division, Jamestown, N. Y., is producing a light car-top boat of basswood plywood under contract with a distributor who sells small and large radio cabinets for Emerson Radio and Majestic Radio. Dusenfeld was originally contracted for light aircraft parts, but has diversified into boats.

Standard Motor Products—Northrop is expanding light metal and aircraft businesses outside the industry. Newest product is the "Safibull" "03" two-wheel motor vehicle, for commercial and personal use. Northrop Products, Inc., is putting out a new type shower base of cast aluminum. Northrop Aircraft, jointly owned by Northrop and Joshua Reed of Marks of Standard, is building racing vehicles and aircraft. In development of "Turboliner" gas turbine.

Chance Vought's new Metalite structural material has characteristics making it suitable for use in many non-aircraft products, will not release it for some time yet, as estate output goes into Navy planes.

Corrion-Wright has purchased Vinton Aerotragh Corp. of Des Moines, Iowa, and is combining its development efforts with Vinton's aircraft structure, aircraft picture projection, cameras, and allied equipment. Company says it will not change location or personnel.

Bell Metal Casting—Bell Aircraft's Rutledge, Vt., division is making heavier cases for a radiator company, filling exhaust ports for another firm, parts for aircraft instruments for a third, building 5 hp gasoline engines and transmission, dry-clutch, aircraft starters using aircraft materials, aircraft starters, aircraft batteries, and aircraft drives.

Rate of strides is to convert virtually any type production for which we have suitable equipment and manpower."

Refell Aircraft's slogan is "We build 'em—you sell 'em."



Grumman Canoe. Great strength of the aluminum canoe being manufactured by Grumman Aircraft Engineering Corp. is demonstrated in this photo of ten men standing on the boat. Length of the canoe is 26 ft., and its weight of 720 lbs. supports a weight of 1,000 lbs.



BRITISH TRAINER:

First flying portion of the Royal Navy's new Fairey Firefly Trainer, modeled after the Fairey fighter. The instructor sits in the rear cockpit, raised to increase his field of vision. Powered by a Rolls-Royce Griffon engine, the trainer has a top speed of more than 400 mph.

contracts for deep freeze and quick-freeze meat lockers, and insulation, insulation, building metal shower stalls, jams, angle-plate parts and water tanks for and cash-striking with aircraft leatherages.

Eastern Kraftsmen have an "Alice Eater" all-metal automobile for kids, with "eye appeal and utility," aircraft construction for 1947 market. In wood shop, company is building display shelves and other merchandise, set-ups, **4-Gold** and **4-Gold** A. A. Aircraft with CD-65 and **4-Gold** the Army, and new turns to small and cassette radio interests but hope employees will gradually be absorbed into aircraft accessories production."

Spartan building luxury Sparten Music Testrooms, exclusively distributed by Frank D. Bopkin Company, which has delivered 1300, and caused due to housing shortage, many requires from armed.

Titan Aircraft Corp. subsidiary Titan Detectors, Van Nuys, Calif., is delivering Coca-Cola coin-change vending machines to Mills Industries, Inc., Glendale, also ready with a "self-clearing" vacuum cleaner of its own design this fall.

Following companies told *AVIATION NEWS* they were in aircraft production exclusively because, and interested in new aircraft ideas but dropped them. Lockheed, in plant at present, North America, one hundred percent in aircraft Re-

who has been representative of U.S. firms in overseas for many years.

Republic Backlog Jumps

\$35,000,000 in Six Months

Booking of Republic Aviation Corp., Farmingdale, N. Y., jumped some \$45,300,000 in the first six months of the year, the company's semi-annual statement disclosed.

On June 1, total backlog listed was \$1,631,300, made up of 331,740,000 worth of orders for Hispano-Suiza bombers and B-10s, personal planes and AAF orders of \$49,681,000 for P-47s and XP-51s, photo reconnaissance planes. Actual backlog is higher as the total does not include open parts for B-10s, B-17s and B-24s.

The orders include 26 B-10s for American Airlines and six for Pan American Airways, but exclude Pan Am's option for an additional dozen B-10s. The B-10s orders excepted in the backlog are only those on which cash deposits had been received by June 30.

Republic's wholly-owned subsidiary, Alamedo Motors had a June 30 backlog of \$1,359,300, of which \$1,000,000 is of orders from sources other than Republic. During the first half of the year, the motor company operated at a loss of \$496,146 in sales of \$284,643. That loss reflects mainly reorganization expense and development costs which are being charged off against current income.

Office of Technical Services Has Five Operating Groups

Organizational structure of the recently-formed Office of Technical Services of the Department of Commerce has been completed with the office comprising five operating divisions which perform functions previously carried out by other Commerce bureaus.

Divisions of OTS is John C. Glavis, who has been executive secretary of the Office of the Purchasing Board and chief engineer of the National Inventors Council; duties of both organizations now being performed by OTS.

The five divisions are: Innovation and Engineering, which will advise inventors on financing, marketing and protection of inventions; Industrial Resources and Development, which will finance industrial research projects with \$1,300,000 granted by Congress of which \$300,000 has been placed

the TG-180 program and after Jan 1, 1947 will switch production to its own plant at Indianapolis where it already is making J-33s.

Execution of the work from Indianapolis will be immediately, with the plant to be completed by March. This will raise the closing of Chevrolet's Buffalo aviation plant which during the war was used to produce Pratt & Whitney engines. The plant will revert to the Defense Plant Corp.

Number of engines involved in the switch has not been disclosed. The TG-180 in the newest and most powerful engine yet to receive development by General Electric for the AAF and at AAF's request put into production by Allison.

Hindustan Air Factory Will Produce Trainers

Conversion of the Hindustan Aircraft Factory at Bangalore, Mysore State, wartime maintenance and repair base, into a production factory has been approved by the Government of India. The Standing Finance Committee Board on recommendations made early this year by a technical mission representing the British Ministry of Aircraft Production, and

the Society of British Aircraft Constructors, the expenses and conveniences will cost \$5,684,300.

The new enterprise, titled Central Aircraft Ltd., supersedes the wartime factory which was owned jointly by the Central Government and the British Government. Plans call for the design of a trainer-type plane for the Royal Indian Air Force, production of which is expected to give "knockdown" and shift to Indian workers.

Bell Leases Niagara Falls For Research Center

The War Assets Administration has leased the Government-owned plant at the Niagara Falls Airport to Bell Aircraft Corp. for two years, plus the remainder of this year, beginning Sept. 1.

Bell will be based on an plant sites with a stated maximum for each year. At any period during the Bell may exercise an option to purchase the plant for \$4,225,000 less depreciation for and beginning every year of the current lease.

Both Bell and Bell will use the plant for research in development of military aircraft, rocket planes, guided missiles, piloted aircraft and rocket power plants, together with the production of helicopters.



WINDSHIELD BY PIPE:

While many of the other light-plane companies are buying wings of their components from subcontractors, Peer makes most of its own components, even its expensive transports, plastic windshields. Above: Peer worker inspects windshield on new Cessna 170E. *Inset*



AND THEN—BANG!

That is what happens when a supercharger impeller, rotated at 20,000 rpm, is carried beyond critical street speed. The whirling pit of Altimark Manufacturing Co. at Los Angeles typifies aircraft industry laboratory testing equipment used in the research of metals capable of withstanding the stresses of mounting speeds demanded of impeller and turbine rotors.



public, one of those sticking to aircraft right leatherages, and insulation, building metal shower stalls, jams, angle-plate parts and water tanks for and cash-striking with aircraft leatherages.

Reed Aircraft says, "... at this time we have nothing to report on the status of our line of maintenance products." Reed's parts have Reed's progressive build pre-fabricated homes. McDonnell Aircraft says definitely not building boats, cars, houses, or any such, but Washington reports McDonnell signed up for Reed's planes with FMA.

Other reports show Goodyear making cutouts, Northrop an anti-icing system for airplanes; Aeromarine, division of General Motors, working on aircraft. Solar, budget money care, stainless steel coffee stand; Bendix, automotive parts and mobile communications equipment. Meacoats, washing machines.

Venezuelan Firm

Servicios Aeronáuticos S. A., a new company to represent manufacturers and distributors of aviation radios, motors, and other equipment. It will be headed by Carlos Vassarriana, with a capital of \$10,000. Manager is John B. Strohman, 32—PRODUCTION

for an expected delivery on four Boeing 747s. The new carrier, Midwest Airlines, Inc., will have its headquarters in Milwaukee, and its main base will be at O'Hare International Airport. The new president is Edward R. Baskin, executive vice president, and Frank P. Kressel, secretary.

POA Will Continue Flights for ATC

Pacific Overseas Airlines' sub-contract from United Air Lines preceding for operation of Army ATC Transport Command flights to Tokyo have been extended to the end of the year. POA officials have announced. The carrier is now making one trip daily to the Japanese capital, plus three trips weekly to Honolulu.

Transoceanic Air Lines, another UAL subcontractor, is flying eleven ATC shuttle trips weekly to Hawaii and United has a daily ATC schedule to Tokyo. All trips are made with Army C-45s. Operations of ATC after Jan. 1 will be subject to further negotiations.

POA probably will add a new ATC operation from Seattle to Tokyo via the Aleutians and another possible route covering Tokyo-Honolulu-Shanghai. The Aleutian run would involve several trips a week.

In its first five months of operation to Aug. 31, POA flew over 4,000,000 miles in the Pacific, averaging 1,000 miles on the ATC routes to Tokyo and 300,000 miles on its own route recently instituted commercial flights. The latter indicated route extensions to Shanghai for UNRRA, two roundtrips to Manila for Consolidated Steel, a roundtrip to Anchorage, Alaska, and several shuttles to Honolulu.

Company's petition asking CAB to expand its Los Angeles-Honolulu service application to the Hawaiian route (see *Aviation News*, Sept. 3) through incorporation of the round trip has been turned down by the Board.

Seek Arkansas Permit

South Central Air Transport, Inc., Fayetteville, Ark., has asked the Arkansas Public Service Commission for permission to discontinue intrastate service between Arkansas and El Dorado until Nov. 1. The company's 1946 CAB SCAT reported that the temporary shuttle operation between the two cities had been maintained at a loss of \$1,273 for 32 days, during which only 15 passengers were carried.

New Midwest Lines Push Extension Plan

The new midwestern carriers—Kansair Airways, Inc., Wichita, Kansas, and Prairie Airways Inc., Allisone, Neb., recently began intrastate operations and are pushing plans for further expansion of their systems.

Kansair Airways, operating two Boeing 707s, is now flying from St. Louis to the northwest corner of the state. At Prairie, Managed airport, Kansas City, Colby, Norton, Phillipsburg, Manhattan, Maryville, Clay Center, Manhattan, Topeka, and Lawrence. Another route extends from Wichita to Newton, Salina and Manhattan, the latter being the connection point for the run to Kansas City.

President of the company, which intends to add links to all portions of the state, is A. V. Bond, Wichita. F. T. Blayze, also of Wichita, is vice president.

At Hutchinson's first scheduled intrastate line, Prairie Airways is operating from-Southern Crosses between Omaha and Alliance via



MARKETER:

Development of advanced marketing methods to provide the spectacular growth of airfreight perishables is the objective of M. K. Crest (left), organizer of Airborne Commodity Sales Co., who is shown presenting Crest's Governor, French J. Lomax with a crate of California cantaloupes packed 24 hours before delivery as a freight forwarder. (Courtesy, Airborne Air Express and Viking Air Transport) All rates weekly trips.

Only one firm, a branch of the Kansas City Southern Railway, operates an air cargo system originating there.

Florida Rate War

The two adjoining Florida carriers have virtually entered into a rate war in their efforts to protect their home markets from carriers to their opposite coasts. The fight is being waged upon as a struggle for Florida west coast supremacy.

Willa Air Service reportedly has agreed to merge with the Pan American International airport in Tampa's Drew Field across the bay in adjacent Hillsborough county. Executive travel from Hillsborough county may also move eastward to Tampa. Pan American Air Extra Airlines, another carrier, planning routes strategy, said it would be discontinuing lower landing fees and gasoline taxes.

Laneair, Hastings, North Platte, Scranton and Cheyenne with two roundtrips daily. Principal hub of the company, which is considering use of DC-4s, is Chris Abbott, Wyoming banker and banker.

K. C. Forwarding Agency Will Handle Air Freight

An Cargo Forwarding Agency, a \$100,000 corporation, has been formed at Kansas City to coordinate freight shipments with air cargo carriers operating through and about that city.

Jack Miller of Olathe, Kansas, manager of the agency, has been serving the Olathe market, now a fast growing industrial area, and will be expanded to other cities. The firm will solicit business for the carriers, handle ground transportation of freight, and furnish roads and route information to shippers.

Four air cargo systems operate more or less regularly through Kansas City: National Air Cargo Corp., Air Cargo Transport Co., Fireball Air Express and Viking Air Transport all make weekly stops. Only one firm, a branch of the Kansas City Southern Railway, operates an air cargo system originating there.

Emergency Averted

Kansas City Southern Railway, subsidiary of Kansas City Southern Railway Co., recently helped avert a possible accident at the Kansas City Chevrolet assembly plant when a public utility truck, with propane tank intact, burst into flames. The weight of the cargo loaded in one of the carrier's two C-45s, was 7,300 lbs.

TRANSPORT

CAB Shelves Deicing Proposal In Face of Industry Opposition

Postponement of thermal deicing requirements now by engineers as permitting more orderly development of solution to anti-icing problem, important to all-weather flying.

CAB has postponed indefinitely adoption of a proposed requirement for the use of DC-3s, 4s, as commercial aircraft be fitted into icing conditions unless equipped with approved thermal deicing equipment.

The anti-icing problem is one of the main factors in all-weather flying, is of paramount importance and is the subject of constant research. But engineers assumed the proposed thermal deicing requirement would force permanent installation of devices that have not yet been fully proven.

The Board was advised by CAB Aerodynamics, Instrumentation, Safety, and ASW engineers that thermal deicing still is in an experimental stage, and that forced installation might give unsatisfactory results.

The amendment on which adaptation now has been deferred was contained in CAB Draft release No. 46, and proposed that after the end of next year commercial planes could not be flown into icing conditions unless "equipped with an approved thermal or equivalent means of defrosting wing and propeller surfaces, and other parts as required by the Civil Aeronautics Board."

The Board expressed concern "with the fact that anti-icing and deicing methods commonly and currently used provide only limited protection from the hazards of ice-causing accumulation of ice on aircraft in flight." A Board survey indicated, as release stated, that research and engineering had accomplished "considerable development" of the thermal method. But it added that "any anti-icing or deicing equipment would be susceptible which will resultfully prevent and accumulate of ice during flight in any weather condition and which is approved by the Administrator."

The proposed amendment was circulated for comment by the

pure air through an exchanger, which would feed the duct system. The other is gasoline heating, usually located in the plane. The latter is regarded as majorly expensive, though the two methods have been determined upon the former. Due to danger of backfiring, and of ice fog vapor in the system from gasoline engines, direct circulation of exhaust has never been seriously considered.

Any loose couplings allowing escape of exhaust gas or raw vapor would threaten fire, corrosion, and erosion hazards, and temperature of structures must be closely gauged.

Design of wings and empennage leaves much to be desired. Protecting elements of mode and trailing such as antennas and loop, can be lost and out of commission. Wind shear deicing is not easy; pilots have carried out as some test flights to knock the glaze off, for two-bladed cowling with exhaust heating behind them. Freezing of controls has been nearly eliminated. Failure of landing gear due to ice has not been reported. Much progress has been made in fluid



PLAN AIR POSTOFFICE

Temporary conversion of a TWA Douglas DC-8 into a flying postoffice is being planned by those TWA engineers and postal officials. The plane will be fitted with mail handling facilities for declassifying, sorting, and mailing. Furthermore, very such underground handle, such as fire, effect of exhaust heat on structures, corrosion of structures, and carbon dioxide gas in the place, would be involved.

Available information is that the new Douglas DC-8, Martin 302 and 303, Republic Rainbow, Convair 240, and Boeing 307, and 417, will have heat de-icing. These manufacturers are all committed to solution of the problem. They are taking a chance on certification, of course, will meet the thermal problem will be disengaged.

In general, two types of thermal systems are considered practical.

The will use exhaust gas to heat

tracing of propellers and heat detecting of carburetors.

Most engineers agree that heat is next to pressure of all anti-icing devices. Amount of heat required to prevent freezing of anti-icing appears to be comparatively small. Cost of fuel for gasoline de-icing is not prohibitive.

Increasing efficiency of heater for speed and efficiency increases spoiler effect and resulting savings of even small amounts of ice.

In a proposed amendment, CAB used the term "light icing conditions" without defining it. Engineers commented that light icing can turn into heavy icing quickly and would like to see a definition. Weather Bureau air traffic control pilot Henry Long can spend the last of an airplane so fast that a cloud climb through 10,000 ft. of it, or descend safely through 1,000 ft. to the ground.

Proposed rules will give air transport the advantage of flying at or above 25,000 ft. The aeroplane will be flying in icing conditions, but they will always have the problem of passing through the lower ice levels.

Airport Users Survey

Regular operations of the nation's scheduled airlines served for less than 25 percent of the total use of all airports, according

\$40,000,000 Loan

Pan American Airways has arranged a \$40,000,000 bank credit at 1% percent interest to the airline for working capital during the next 30 months, including expenses on its \$100,000,000 equipment program. Participating in the credit are the National City Bank of New York, the First National Bank of New York, the Chase National Bank of New York, with the New York Trust Co. acting as a agent.

With \$30,000,000 of the \$40,000,000 credit now available, Pan American will have \$30,000,000 additional available from operations to June 30, 1948, leaving \$30,000,000 to \$40,000,000 which had to be raised by other means.

After profit rate during July and August when the Constellations were grounded, PAA is rapidly reducing existing power and believes it will be well in the black during the latter part of the year.

to the Air Transport Association Statistics for the first four months of 1946, taken from the Aircraft Operations Reports of CAB, reveal that 27 percent of total air passengers were carried on scheduled air transport. The total indicated commercial and private operations and 16 percent to Army and Navy, ATA said.

CAB Ponders New Nonscheduled Regulation

Possibility that CAB may circulate a new proposal to amend section 361 of the Board's certificate of non-scheduled air service, will be seen last week as the Board considers what procedure it will follow in bringing the non-scheduled case to resolution.

An around industry has emerged for the most part, although, on the other hand, movement in the industry circulated last week in the *Aviation News*, June 10. Particular interest of the comment has been the Board's proposed permission that a carrier is not non-scheduled if it operates more than 10 round trips a month between the same two points for two consecutive months.

This restriction probably will be eliminated or at least tempered. The Board also can be expected to differentiate between non-scheduled cargo and non-scheduled passenger operations, but it is also likely that the decision will be to integrate to terminate the exemption as it appears to non-scheduled air carriers in foreign and overseas transportation.

The Board has given assurance that oral argument will be held on the use of regulations of non-scheduled operations before new rules are put in effect. Original expectation was that this would be held soon after Oct. 1 but a decision to circumscribe the industry with a new proposal would result in immediate participation of the small cities used in the hearing.

Warren E Baker Appointed Trial Examiner for CAB

Warren E Baker, formerly with the general counsel's office of the War Shipping Administration, has been appointed a CAB trial examiner. Baker received his law degree from Indiana University in 1940 and practiced law in Fort Wayne, Ind., from 1940-42.

On active duty as a Naval officer from July, 1942, to December, 1945, he was assigned to WSA in May, 1945, after extensive service at sea. Upon his discharge from the Navy, Baker remained on the WSA general counsel's staff in a consulting capacity until leaving for CAB.

NWA Mechanics Pact Is Approved by Union

Agreement between Northwest Airlines and the International Association of Machinists on settlement in a five-month-old labor dispute has been followed by a new contract, approved by the union membership by a vote of 322 to 52.

The contract will provide pay increases averaging 10% over six months, a half pay and a \$10,000 life insurance policy for test flights, night shift premiums and new maternity rates.

The emergency board named by President Truman had recommended denial of the machinists' demand for an 18-cent increase, but the union had prepared a 5-cent rate. The new contract, affecting 485 employees, will go into effect immediately and run until July, 1947.

The machinists struck last July 2, grounding NWA planes for 39 hours.

Ecuador May Take Over Airline After C-46 Crash

There is a possibility that the Ecuadorian government may take over Aviacion Nacional de Ecuador S. A. (ANDENA) on an aftermath of the recent crash of a C-46 in which 39 people lost their lives.

ANDENA, organized in March as a subsidiary of Latin American Airways, Inc., started operations with three surplus C-46s, only one of which is now flying. Aviacion circles in Ecuador feel these planes are generally unsatisfactory for the small fields used in the country.

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Alaskans Score CAB On Pacific Decision

Alaska Airlines has initiated CAB's newest Pacific case, dissenting from Northwest Airlines' route from Chicago and Seattle to Anchorage as constituting a serious impairment to development of the territory and has requested the Board to reconsider its opinion.

As matters now stand, its petitioners say, "Alaska receives a wholesale ship, with Northwest's Oriental route serving only one Alaskan city and the rest of the territory forced to rely on freight lines and air mail to accomplish air transportation to the area."

Alaska Airlines said it now serves 140 cities and towns within the territory and is the only airline set up to provide complete one-carrier freight and passenger connections between all major Alaskan points and the U. S. Accordingly, the two contestants, CAB and the Board, for the request for a U. S. order automatically eliminate one-carrier connections for most of Alaska's key population centers.

IATA Meeting

The Western Traffic Conference of the International Air Transport Association, one of nine such regional groups, met last week for its first session at Rio de Janeiro. Among representatives present were working uniform standards of tariffs, schedules, conditions of carriage reservations codes, etc.



MAP FACSIMILE:

In the first such commercial operation, Delta Air Lines has started use of overseas reproduction for movement of weather map between stations. Latest equipment, shown above, has been installed at Denver and Cheyenne.



TWA CHANGE:

TWA has reorganized extensive of its operations in the Midwest, where it now plans to accommodate shipments carried in air mail. TWA at last has been renamed and five new units will serve the route.

Examiner Recommends Better Tankline Service

Vestly engaged transportation service between Cincinnati and New York moved closer to fulfillment recently when CAB Examiner F. A. Low, Jr., recommended that the Ohio city be included as an intermediate point as TWA's AM 3 and receive new nonstop service on American Airlines' AM 39.

Low asked the Board to deny American's application for an extension of AM 39 from Cincinnati to New York, Newark via Pittsfield, Worcester, Boston, and Philadelphia, recommending instead that the route be extended parallel with AM 39 from Washington to New York, Newark via Baltimore and Philadelphia; that Washington be added as an intermediate point between Baltimore and Philadelphia; and that American be authorized to operate nonstop over AM 39, an extension between Cincinnati and either Philadelphia or New York/Newark, or both.

Route extension application of TWA, Capital, Eastern, and Southern, United and Bessell to the Cincinnati-New York area should be denied, Low stated.

Four Engine Pilot Ranks Effective on TWA, AOA

Pilot pay increases on four-engine aircraft recommended by a Presidential emergency board have been put in effect by American and American Overseas Airlines. TWA applied the same recommendation to its plane AM 6

Non-Scheduled Freighters Create Business

THREE scores of independent non-scheduled air freight carriers are performing a phenomenal job building business for aviation which never existed before.

It is true that possibly as many as a third to one half of them cannot remain in business for economic reasons, that price cutting among the non-scheduled carriers, and that some are operating below the standards of the scheduled airlines, although their safety record has been far better than responsible industry observers were forecasting six or eight months ago.

But those survivors have been given too little credit by the rest of the aviation industry for their achievements in converting so many firms in business and industry to air cargo. Business pressures against air cargo have been as strong as the personal fears which retarded mass passenger travel for so long. The frequently remarkable advantages of high speed transportation for cargo required prompt, skillful administration and constant balancing at the counter arguments and merits of those who headed sales, marketing and merchandising, rather than contact with the top executives alone.

Aviation News, August 13, revealed that the non-scheduled and contract carriers, by official reports filed with CAB, earned from five to ten times the volume of freight flown by all of the scheduled

lines in May and June, although the national air freight load was negligible prior to VJ Day, before establishment of most non-scheduled air cargo services.

Figures just released emphasize again the non-scheduled gains. The extent to which Black Airways, largest of the non-domestic carriers, has boosted its traffic in revenue ton miles is indicated by the latest reports filed with CAB by the three scheduled airlines which load in air cargo, and by an announcement of Black.

	American	United	TWA	SAA
June	349,888	217,535	186,236	665,750
July	448,932	362,643	238,306	835,124

In August, Black more than doubled its June business, with 1,474,681 revenue ton miles, bringing that company's first six months traffic to 4,025,343 for its 10 aircraft. August figures for the other carriers have not yet been sent to Washington.

Despite the massive criticism which has been leveled at these enterprising flying van lines, they have promoted aviation aggressively and their sales efforts are making an enormous and permanent impression on air transportation, not to speak of the impetus being given to the nation's marketing and merchandising systems.

VA Students Increase 1,000%

OFTENMUCH larger of aviation schools over the number of veterans who would seek aviation education under the terms of the Gernemann's Readjustment Act seem to be well on their way to fulfillment as the basis of futures compiled by the Veterans Administration.

While the most recent available data are now old (perceived on the basis of an April 30 sampling of 20 percent of contract schools), operators are drawing their chief satisfaction from the apparent increase shown over a previous Veterans' Administration tabulation, an overall increase of better than 1,000 percent.

VA makes its sampling every two months and figures for June 30 are not yet complete. As of April 30, there was a total of 10,380 students enrolled in all categories of aviation instruction, compared to 965 at the end of February. The greatest number on April 30, as was the case ear-

lier, was taking mechanics courses, or 5,865 as against 775 in February. Aeronautical engineering, a category not listed in February, was second in April, affecting 2,289 students.

Private flying was number three in the courses, with 785 enrollees. The number in February was 55. Commercial flying courses had 471 at April, 60 in February, aviation management, 135 in April, 50 in February. Another new category in April showed surprising interest, as 307 students were enrolled for airport management courses. Unclassified aviation instruction was listed for 497 students.

Full realization of the impact of the veterans program on aviation is still impossible, since education has not even reached its peak by June. A conservative estimate would place the number of students at 20,000 at mid-year, with the high mark still months distant.

ROBERT M. WOOD



Famous airlines select the Sperry A-12 Gyropilot

A-12 GYROPILOT AIRCRAFT GREAT FLIGHT APPROXIMATOR AND PASSENGER COMPARTMENT

Sperry leading airlines, in their continuing efforts to improve navigation under all weather conditions — to enhance aircraft reliability when instrument weather prevails — to increase passenger comfort — have selected the Sperry A-12 Gyropilot to supplement their flight personnel's skill and experience.



Sperry Gyroscope Company, Inc.

GENERAL OFFICES: GREAT NECK, N.Y. — SUBSIDIARIES: SPERRY CORPORATION
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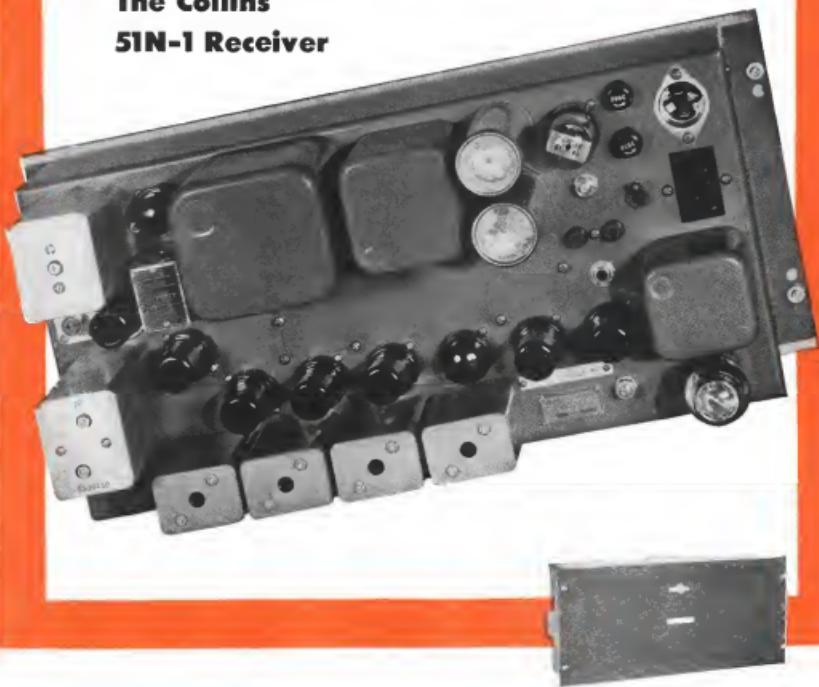
■ As a standard secondary to the A-12 Gyropilot, Sperry offers its Automatic Approach Control — another step toward example automation that will result in improved schedule reliability.

■ The A-12 Gyropilot gives the Captain complete automatically stabilized control of his aircraft at all times, including changes in altitude, bank and turn. Over control, "lounging" and "wallowing" are eliminated.

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The Collins 51N-1 Receiver



For Continuous Airline Service

The 51N-1 is a new single channel receiver designed specifically for airline ground station reception between 2.5—12.0 mc. Thoroughly engineered, it offers superior performance in essential features—signal to noise ratio, sensitivity, selectivity, image rejection, and reliability.

Crystal control provides a very high order of stability. The output transformer is arranged for either straight output or simplex control from a remote position. The receiver contains an automatic noise limiter. B.f.o. is available on special order.

For further information, send today for descriptive literature.

SPECIFICATIONS:

Application: single frequency reception
Frequency range: 2.5—12.0 mc.
Frequency control: quartz crystal
Signal to noise ratio: 10 db at 2 micro volts input
across 100 ohms
Sensitivity: variable manually
Image rejection: 85 db minimum
Selectivity: 5 kc total bandwidth at 6 db down
from resonant frequency; 16 kc at 60 db down
Weight: 29 pounds
Dimensions: standard 19" rack mounting panel,
8½" h, 11" d

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